Alyeska pipeline SERVICE COMPANY

P. O. Box 60469, FAIRBANKS, ALASKA, 99706

Letter No. 03-19871
File 7.3.1

COURIER DELIVERY

May 12, 2003

Air and Radiation Docket
Attention Docket Number OAR–2002–0053
U.S. Environmental Protection Agency
1301 Constitution Avenue, NW.
Room B-108
Washington, DC 20460

RE: Comments Concerning the Direct Final Rule and Proposed Rule Amendments to the Standards of Performance for Stationary Gas Turbines, 40 C.F.R. Part 60, Subpart GG [68 FR 17990 et seq. (April 14, 2003)]

Alyeska Pipeline Service Company (Alyeska) is providing two adverse comments to EPA's direct final rulemaking concerning the above referenced new source performance standards (NSPS). Overall, Alyeska enthusiastically support EPA's efforts to codify certain alternative monitoring and test methods and procedures that have historically been routinely approved by EPA. With two exceptions, we agree with EPA's proposed changes to the rule. We offer two comments (see Comment 1 and Comment 5 below) that we view as "adverse" pertaining to EPA's proposed changes to the rule. Comment 1 pertains to EPA's proposed alternative monitoring provisions for stationary combustion turbines that are not equipped with water or steam injection to control emissions of nitrogen oxides (NO_x). Comment 5 provides a technical correction to the procedures referenced [40 CFR Part 75, Appendix A] by § 60.335(a).

We would also like to take this opportunity to provide additional remarks intended to provide clarifications or corrections to EPA's rulemaking. Finally, we are submitting additional suggested alternative monitoring and test procedures for consideration by EPA in the current, or future, rulemaking efforts.

Our comments pertaining to monitoring, test methods and procedures and definitions are listed and discussed below:

Continuous Monitoring Provisions – 40 C.F.R. §60.334

1. ***Adverse Comment.*** **EPA should withdraw the optional continuous emission monitoring provisions under §§60.334(c), (e) and (f) for turbines that do not use water or steam injection to comply with the applicable NO_x emission standards.**

Under the current rule, turbines that are not equipped with water or steam injection to control NO_x emissions are not subject to continuous monitoring requirements under 40 CFR 60 Subpart A or GG. Only periodic fuel-bound nitrogen content monitoring is required for owners and operators that claim an allowance for fuel-bound nitrogen. Compliance for units that do not use water or steam injection is based the initial performance test required under §60.8 and §60.335(b) and good air pollution control practices under §60.11(d). Furthermore, the only monitoring and excess emissions reports required to be submitted under § 60.7(c) for NOx, as defined by the existing §60.334(c)(1), include reports for turbines subject to the water injection requirements of §60.334(a), or for turbines that have a fuel nitrogen allowance. Gas turbines that are not using water injection to comply with the 40 CFR 60 Subpart GG NOx requirements, or turbines that do not have a nitrogen allowance are not required to submit § 60.7(c) excess emissions or monitoring systems performance reports for NOx. Since 40 CFR 60 Subpart GG does not require on-going continuous monitoring for gas turbines that are not water injected, it is pointless and somewhat misleading to provide an option for the installation and operation of an expensive continuous monitoring system (CMS) [e.g continuous emission monitoring system (CEMS) or alternative continuous parameter monitoring system (CPMS)] for NOx along with the burdensome reporting where no such requirements apply in the rule. A CMS for monitoring NOx emissions of non-water injected gas turbines may be required under 40 CFR Part 75, or imposed by the facility's permitting authority, but it is not required by 40 CFR 60 Subpart GG.

If it was EPA's intent to incorporate the NOx monitoring options to meet the continuous monitoring requirements (40 CFR Part 75) under Title IV of the Clean Air Act, it is recommended that EPA just reference back to the requirements of 40 CFR Part 75 along with the clarification that the 40 CFR Part 75 requirements only apply in the instances that the gas turbine is subject to both the NOx standard of 40 CFR 60.332(a) and continuous monitoring requirements of 40 CFR Part 75. This distinction is important because the State of Alaska along with the State of Hawaii are exempt from the Acid Rain Program requirements under Title VI of the Clean Air Act.

The following language is provided in a related discussion in the preamble to the direct final rulemaking (68 FR 17991, Section II.A.):

"...Owners or operators of new turbines that commence construction after the effective date of the direct final rule and do not use water or steam injection to control NO_X emissions can use a NO_X CEMS as an alternative to continuously monitoring fuel consumption and water or steam to fuel ratio..."

As discussed above, an owner or operator of a turbine that is not equipped with water or steam injection would not be required to continuously monitor fuel consumption and water or steam to

fuel ratio. The option for a monitoring alternative is not relevant, as no monitoring applies. Therefore, the statement should be withdrawn.

2. ***Suggested Clarification to §60.334(a).*** **EPA should amend the monitoring provisions of 40 C.F.R. §60.334(a) to clarify that monitoring applies only to those turbines that must use water or steam injection to control NO_x emissions to comply with the NO_x standards under §60.332(a).**

Currently, monitoring provisions of 40 C.F.R. §60.334(a) broadly apply to any turbine using water or steam injection to control NO_x emissions. Turbines may, however, be able to comply with the Subpart GG standard uncontrolled, but need water or steam injection to comply with a more stringent NO_x standard. Therefore, EPA should clearly state in 40 C.F.R. §60.334(a) that the continuous monitoring system (CMS) provisions only apply to turbines using water or steam injection to control NO_x emissions to comply with the NO_x standard under §60.332(a).

Fuel Sulfur Monitoring – 40 C.F.R. §60.334(i)(3)

3. ***Suggested New Definition and Monitoring Provision.*** **EPA should add a definition for "low sulfur diesel fuel", consistent with the latest definition in 40 C.F.R. Part 72, and provide relief from fuel sulfur content monitoring for owners and operators of turbines that combust qualifying fuel.**

Diesel fuel is defined in 40 C.F.R. Part 72 to mean

"a low sulfur fuel oil of grades 1-D or 2-D, as defined by the American Society for Testing and Materials standard ASTM D975-91, "Standard Specification for Diesel Fuel Oils," grades 1-GT or 2-GT, as defined by ASTM D2880-90a, "Standard Specification for Gas Turbine Fuel Oils," or grades 1 or 2, as defined by ASTM D396-90a, "Standard Specification for Fuel Oils".EPA should add a definition for provide relief from fuel sulfur content monitoring for owners and operators of turbines that combust "low sulfur diesel fuel".

Fuel sulfur sampling is unnecessary for fuels that qualify as *diesel fuel*, as defined in 40 C.F.R. §72.2, because such fuels have a sulfur content well below the Subpart GG standard [§60.633(b)]. When "diesel fuel" is combusted, there is no possibility of exceeding the 0.8 weight percent fuel sulfur limit.

Test Methods and Procedures - 40 C.F.R. §60.335(a)

4. ***Suggested Waiver.*** **For turbines that do not have auxiliary-fired waste heat recovery units, EPA should waive the requirement to conduct a preliminary O_2 or CO_2 traverse, as required by Method 20 (40 C.F.R. Part 60, Appendix A-7), or as alternatively provided by 40 C.F.R. Part 75, Appendix A (§6.5.6). EPA should allow a single sample**

point for conducting performance tests to demonstrate compliance with pollutant concentration standards for stationary gas turbines.

In a stationary combustion turbine, combustion gases will pass through a minimum of two turbine stages after exiting the combustor, which thoroughly mixes the exhaust gases. While the exhaust flow (velocity) may vary across the stack, the pollutant and diluent concentrations will be uniform. It is not necessary to conduct a preliminary O_2 or CO_2 traverse or stratification test.

Oil and natural gas production facilities and supporting operations in the State of Alaska operate a substantial number of gas turbines representing numerous manufacturers and models. In the years since Subpart GG was promulgated, the operators have conducted numerous Method 20 performance tests of many gas turbine make/models. We have substantial data demonstrating that pollutant and diluent concentrations across the turbine exhaust plenum are not appreciably stratified. Therefore, the preliminary O_2 or CO_2 traverse required by Method 20 or the alternative stratification test required by 40 C.F.R. Part 75, Appendix A are not necessary and single-point sampling will yield representative emission concentration data.

5. ***Adverse Comment. Typographical Error.*** **The reference in §60.335(a) to the procedures in *"§6.5.6.3(a) and (c)"* [40 C.F.R. Part 75, Appendix A] should be changed to *"§6.5.6.3(a) and (b)"* and a subparagraph should be added to clearly distinguish requirements for owners and operators that opt for using ASTM D6522–00 or EPA Method 7E instead of Method 20.**

We suggest that §60.335(a) should read as follows:

"(a) The owner or operator shall conduct the performance tests required in § 60.8, using either EPA Method 20, ASTM D6522–00 (incorporated by reference, see § 60.17), or EPA Method 7E and either EPA Method 3 or 3A in appendix A to this part, to determine NO_X and diluent concentration, except as provided in § 60.8(b). ***Other acceptable alternative reference methods and procedures are given in paragraph (c) of this section.***

(i) *If ASTM D6522–00 (incorporated by reference, see § 60.17) or EPA Methods 7E and 3A (or 3) are used, the owner or operator shall perform a stratification test for NO_X and diluent pursuant to the procedures specified in section 6.5.6.1(a) through (e) appendix A to part 75 of this chapter. Once the stratification* ***test*** ~~*sampling*~~ *is completed, the owner or operator shall analyze the data using the procedures in section 6.5.6.3(a) and* ***(b)*** ~~*(c)*~~ *to determine if subsequent* ***performance*** ~~*RATA*~~ *testing will occur along a short* ***measurement line*** *(0.4, 1.2 and 2.0 meters from the stack or duct wall),****a*** ~~*or*~~ *long* ***measurement line*** *(16.7, 50.0, and 83.3 percent of the way across the stack or duct)* ***or a single point*** ~~*reference measurement line. The short or long reference method measurement line, as determined above, will serve in lieu of the sampling points usually required by EPA Method 20. In no case shall the RATA be based on fewer than three sample points as specified in section 8.1.3.2 of PS 2 in appendix B to this part. Other*~~

~~*acceptable alternative reference methods and procedures are given in paragraph (c) of this section.*~~"

Much of the new language EPA has added to the test methods and procedures under §60.335(a) pertains to relative accuracy test audits (RATAs). As these requirements are being applied to performance testing, any reference to a RATA should be removed. Sections 6.5.6.1(a) through (e) of 40 C.F.R. Part 75, Appendix A, cited in §60.335(a), provide for a stratification test to determine the number of traverse points to be used in a RATA. EPA has also cited paragraphs (a) and (c) of section 6.5.6.3. Section 6.5.6.3 of Part 75 appendix A pertains to acceptance criteria and conditional provisions for traverse points to be used during sampling. Paragraph (c) only addresses recordkeeping. Notably, EPA has not cited paragraph (b) of section 6.5.6.3 which conditionally provides for using a single point for conducting sampling. The omission may be intentional or simply a typographical error. If the omission was intentional, then we suggest that EPA re-consider the issue in the interest of consistency with Part 75. See also Comment 4.

6. ***Suggested New Provision.*** **EPA should allow owners and operators to use a multi-hole probe that meets EPA specifications for performance tests in lieu of a preliminary O_2 or CO_2 traverse required by Method 20 or a stratification test required by 40 C.F.R. Part 75, Appendix A.**

Currently, written requests must be submitted to EPA for approval each time an owner or operator intends to use a multi-hole probe during a performance test of a turbine. EPA should codify the option to use a multi-hole probe, provided the probe meets EPA guidelines published in their Technical Assistance Monograph Evaluation Procedure for Multi-Hole Sample Probes (Guidance Document – GD-31).

Test Methods and Procedures - 40 C.F.R. §60.335(b)(2)

7. ***Suggested Revision to §60.335(b)(2).*** **The EPA should allow performance tests to be conducted in the normal operating range of the gas turbine and allow for testing units that cannot be operated at "peak load" due to process constraints.**

Turbines that cannot physically attain "peak load" or even 90 percent of peak load that are subject to performance test requirements under Subpart GG currently must submit written requests for EPA approval to conduct the testing at reduced loads. EPA should revise 40 C.F.R. §60.335(b)(2) as follows:

"...The 3-run performance test required by § 60.8 must be performed within ±5 percent at 30, 50, 75, and 90-to-100 percent of peak load or at four evenly-spaced load points in the normal operating range of the gas turbine, including the minimum point in the operating range and 90-to-100 percent of peak load, <u>or the highest achievable load point if 90-to-100 percent of peak load cannot be physically achieved in practice</u>."

It is reasonable to expect that further testing would be required should such a unit be capable of achieving higher load points than achieved during the initial performance test.

Definitions – 40 C.F.R. §60.331

8. ***Suggested Clarification to the Definition of "Natural Gas".*** **EPA should provide the total sulfur specification in units of measurement that are more universally understood not only in the natural gas utility industry, but also in the upstream petroleum exploration and production industry. Therefore, EPA should provide the equivalent sulfur content in units of parts per million by volume (ppmv).**

Sulfur compounds present in natural gas have been historically measured analytically as a weight in grains of sulfur contained in 100 standard cubic ft. of gas (gr.S/100 scf). Using gas chromatography techniques, fuel sulfur content is now typically measured on a volumetric basis (ppmv). Using EPA standard conditions (68 degrees F), the total sulfur concentration equivalent to 20 gr/100 scf would be approximately 344 ppmv.

We anticipate others may also make similar adverse comments to the direct final rule. EPA should consider taking this rulemaking opportunity to also act upon our comments and the comments made by others that are suggestions or provide clarification. We appreciate this opportunity to provide comments to EPA on this important rulemaking. If there are any questions or concerns regarding these comments, please contact me at 907-450-7652.

Sincerely:

Don Mark Anthony
Air Quality Engineer

cc: Mr. Jaime Pagan/EPA